

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method comprising:
dynamically discovering a set of subnets, the set of subnets having visibility of a transmission; and
selecting a network element to perform the transmission, the network element being in one of the set of subnets;
sending a transmission job identifier to the network element, wherein the transmission to be performed by the network element will include said identifier and the address of said one of the set of subnets; and
receiving an indication from the network element that it is aware of an alias domain representative being in another one of the set of subnets.
2. (Currently Amended) The method of claim 1 ~~wherein the selecting the network element comprises~~ further comprising establishing the discovered set of subnets as an alias domain wherein each one of the set of subnets is assigned the same subnet address:
~~ordering a set of network addresses; and~~
~~selecting one of the set of network addresses, the one corresponding to the network element.~~
3. (Currently Amended) The method of claim 1 wherein the ~~selecting the network element comprises~~ transmission is a multicast transmission:
~~—indicating a preference value for at least one network element in each of the set of subnets; and~~
~~—determining the network element to have the preference value most desired in the set of subnets.~~
4. (Original) The method of claim 1 wherein the selecting the network element comprises determining the network element to have a set of data to be transmitted for the transmission.

5. (Original) The method of claim 1 further comprising maintaining a state of the transmission for each member of each of the set of subnets.

6. (Currently Amended) A method comprising:

~~dynamically~~ establishing a set of subnets as ~~a~~ an alias domain wherein each one of the set of subnets is assigned the same subnet address by automatically a) sending a discovery message to the subnet representative of each one of the set of subnets, b) evaluating a response from the subnet representative, c) where the response indicates that the sender's subnet has an alias, then assigning the sender's subnet to a domain indicated by the response, and d) where the response indicates that the sender's subnet has no alias, then storing the sender's subnet address as a domain;

selecting a network element in the alias domain to transmit a set of data to the domain; and

maintaining a status of transmission of said set of data, wherein the status was received from the network element.

7. (Original) The method of claim 6 wherein the selecting the network element comprises:

ordering a set of network addresses; and

selecting one of the set of network addresses, the one corresponding to the network element.

8. (Currently Amended) The method of claim 6 wherein the ~~selecting the network element comprises~~ alias domain is a multicast domain, the method further comprising selecting a representative for the alias domain and delegating a multicast job to the domain representative:

~~indicating a preference value for at least one network element in each of the set of subnets; and~~

~~determining the network element to have the preference value most desired in the set of subnets.~~

9. (Original) The method of claim 6 wherein the selecting the network element comprises determining the network element to have the set of data to be transmitted for the transmission.

10. (Original) The method of claim 6 further comprising:
determining the status of transmission for at least one target in the domain to be incomplete; and
selecting a second network element to complete transmitting to the at least one target, the second network element having the set of data locally.
11. (Currently Amended) A method comprising:
transmitting a discovery message to each of a number of representatives of subnets in a network, the discovery message includes a transmission job identifier;
receiving responses to the discovery messages from each of the number of representatives of the subnets wherein the response from each representative indicates whether or not the transmission job identifier is stored locally;
creating a number of alias domains in the network based on the responses to the discovery messages, wherein if a response from a sender indicates the identifier is stored locally then the sender's subnet is assigned to an alias domain indicated in the response, and if the response indicates the identifier is not stored locally, then the sender's subnet is assigned to an alias domain;
for each alias domain in the network, assigning one of the number of representatives of the subnets whose subnet is part of the alias domain as the domain representative.
12. (Original) The method of claim 11 wherein assigning one of the number of representatives of the subnets whose subnet is part of the alias domain as the domain representative comprises:
ordering a set of network addresses; and
selecting one of the set of network addresses, the one of the set of network addresses corresponding to the one of the number of representatives of the subnets.
13. (Original) The method of claim 11 wherein assigning one of the number of representatives of the subnets whose subnet is part of the alias domain as the domain representative comprises:

indicating a preference value for each of the number of representatives; and
determining the one of the number of subnet representatives to have the
preference value most desired of the number of representatives.

14. (Original) The method of claim 11 wherein assigning one of the number of
representatives of the subnets whose subnet is part of the alias domain as the domain
representative includes determining one of the number of representatives of the
subnets to have a set of data to be transmitted throughout the network.

15. (Currently Amended) A system comprising:

a server to ~~dynamically-automatically~~ establish ~~a-an~~ alias domain from a first and
second subnet, to select a representative for the domain that is in one of the subnets,
and to delegate a multicast transmission of a set of data to the representative;

a first network element connected to the server, the first network element
having been selected as the representative to transmit the set of data to a set of targets
in the domain, and to maintain a status of the transmission; and

a second network element connected to the server and the first network
element, the second network element to forward ~~data-~~multicast traffic between the first
and second subnet.

16. (Original) The system of claim 15 wherein the server to select the representative
comprises the server to order a set of network addresses, the set of network addresses
corresponding to a set of network elements in the first and second subnet, and to select
one of the set of network addresses.

17. (Original) The system of claim 15 wherein the server to select the representative
comprises the server to determine the first network element to have the set of data.

18. (Original) The system of claim 15 further comprising a third network element to
resume transmission of the set of data if the first network element fails to complete the
transmission of the set of data, the third network element being in the domain and
having the set of data locally.

19. (Original) The system of claim 15 further comprising the server to maintain a
status of the transmission.

20. (Original) The system of claim 15 wherein the first network element comprises a domain cache to indicate an alias domain corresponding to the domain.

21. (Currently Amended) A machine-readable medium that provides instructions, which when executed by a set of processors, cause said set of processors to perform operations comprising:

determining a set of subnets to receive a set of data, wherein the set of subnets have visibility of a multicast transmission;

dynamically establishing the set of subnets as a-an alias domain by sending to a representative in each of the subnets a message that includes a multicast job identifier and receiving a response that indicates whether or not the identifier has been previously received by the representative;

selecting a representative for the domain; and

indicating to the selected representative to transmit the set of data.

22. (Original) The machine-readable medium of claim 21 wherein the selecting the representative comprises:

ordering a set of network addresses; and

selecting one of the set of network addresses, the one corresponding to the representative.

23. (Original) The machine-readable medium of claim 21 wherein the selecting the representative comprises:

indicating a preference value for at least one network element in each of the set of subnets; and

determining the representative to have the preference value most desired in the set of subnets.

24. (Original) The machine-readable medium of claim 21 wherein the selecting the representative comprises determining the representative to have the set of data to be transmitted.

25. (Original) The machine-readable medium of claim 21 that provides instructions, which when executed by the set of processors, cause said set of processors to perform operations further comprising maintaining a status of transmission of the set of data.

26. (Original) The machine-readable medium of claim 21 that provides instructions, which when executed by the set of processors, cause said set of processors to perform operations further comprising:

- determining the status of transmission to be incomplete; and
- selecting a second representative to complete transmission of the set of data.

27. (Currently Amended) A machine-readable medium that provides instructions, which when executed by a machine, cause said machine to perform operations comprising:

- receiving a first message from a server indicating a transmission job;
- determining if the machine is in a domain for the transmission job;
- if the machine is not in the domain for the transmission job, then transmitting a second message to the server indicating the machine's subnet; and
- if the machine is in the domain for the transmission job, then transmitting the second message to the server indicating the domain.

28. (Original) The machine-readable medium of claim 27 that provides instructions, which when executed by the machine, cause said machine to perform operations further comprising:

- receiving an indication of a source of a set of data for the transmission job;
- accessing the set of data;
- receiving an indication of a set of targets for the set of data;
- notifying the targets of the transmission job;
- transmitting the set of data to the set of targets; and
- transmitting an indication of a status of the transmission job to a server.

29. (Original) The machine-readable medium of claim 27 that provides instructions, which when executed by the machine, cause said machine to perform operations further comprising:

receiving a notification of the transmission job;
determining if the machine is one of a set of targets for the transmission job;
listening for a set of data of the transmission job; and
notifying a network element when the set of data has been received, the
network element transmitting the set of data.

30. (Original) The machine-readable medium of claim 27 that provides instructions, which when executed by the machine, cause said machine to perform operations further comprising:

receiving a set of data of the transmission job;
indicating to a transmitting network element to modify a rate the set of data is being transferred if the rate is too slow or too fast for the machine; and
indicating to the transmitting network element to retransmit a subset of the set of data if the subset was missed.